

The Capacitors of Death

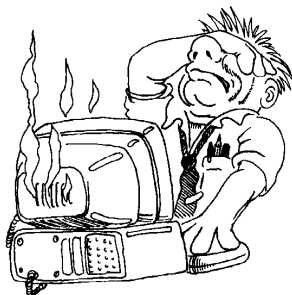
As we all are aware, us Amiga owners have had to live with our circa early 1990's AGA computers for some time now. Back when they were made, you weren't expected to keep the same model forever — maybe a year or two (or three, versus today's 3 months thrust-in-your-face PeeCee's). This is probably why the manufacturers of the period weren't too concerned about using soldered-in NICAD batteries. Batteries which I'm sure they knew had a 4–5 year life span before leaking their corrosive chemical out. By now, everybody should be aware to get those NICADs out-of-there!

However, another circuit board killer is making a statement. This killer has been the leading cause of death for Commodore A3640 accelerator cards but is now presenting itself in A4000's as well. Pre-AGA machines are safe from this specific killer and, as it turns out, A1200's are safe also. It is present in the form of a specific type of capacitor.

For some time now, I've observed that many a dead A3640 circuit board had a kind of fluid surrounding three surface-mounted electrolytic capacitors. They are marked as C105, C106 and C107 on this board and their ratings, printed on the top, are 22 16V (which means 22mfd @16volts). The fluid appears consistently on board after board and even on some still-working A3640's. This fluid is the electrolyte contained within the capacitor, but which has leaked out. The leaked-out fluid eventually introduces corrosion on surrounding components and probably shorts them out (not

counting the consequences of the now bad capacitor). At the time, I believed these capacitors were probably underrated — being overdriven beyond their specifications in the circuit.

But now, after observing the same effect, with the same valued capacitors, on A4000 motherboards, I now have a new belief. I now suspect these capacitors were all sourced by Commodore from the same manufacturer (probably from China!). These capacitors appear to have a shorter life-



span than typical, indicating lower quality. I came to this conclusion after a particularly bad case of an A4000 desktop motherboard where all six of the 22/16V capacitors on there were leaking. Three of those had caused corrosion so bad the computer's audio output was terminated.

Although it appears that these capacitors are virtually guaranteed to leak, on the A4000, the consequences may be somewhat tolerable. All six are located at the back end of the board so if any go bad, the effects won't necessarily shut down use of the

computer. The audio may go out, or I/O may stop but at least you have been given a warning of the problem. For owners of the other Amiga models made during this period — A1200's and A4000T's — there's good news. (Results aren't in yet on CD-32's). The A1200 motherboard doesn't have any of those 22/16V capacitors — and by the time the 4000 Towers were made (which has four of these capacitors on the main motherboard), they apparently sourced the capacitors from another manufacturer and they aren't showing any leakage problems. The latter also applies to the A3640's supplied with the 4000 tower model.

The following is a short summary of the Commodore motherboards, or other boards, found to date which may be affected by these 22 16V caps:

- A4000 — contains 6 (all unsafe).
- A3640 — contains 5 (all unsafe — 3 of which almost always leak, except for boards with newer sourced components).
- A4000T — contains 4 (safe — newer sourced component).
- CD32 — yet to be determined.
- A1200 — contains none (very safe!).

...by Chris Heisman
from the Dayton Area Amiga Gazette, October 2001

George Carlin Quotes

1. *Don't sweat the petty things and don't pet the sweaty things.*
2. *One tequila, two tequila, three tequila, floor.*
3. *Atheism is a non-prophet organization.*
4. *The main reason Santa is so jolly is because he knows where all the bad girls live.*
5. *I went to a bookstore and asked the saleswoman, "Where's the self help section?" She said if she told me, it would defeat the purpose.*
6. *What if there were no hypothetical questions?*
7. *If a deaf person swears, does his mother wash his hands with soap?*
8. *If a man is standing in the middle of the forest speaking and there is no woman around to hear him ... is he still wrong?*
9. *If someone with multiple personalities threatens to kill himself, is it considered a hostage situation?*
10. *Is there another word for synonym?*
11. *Isn't it a bit unnerving that doctors call what they do "practice"?*
12. *What do you do when you see an endangered animal eating an endangered plant?*
13. *If a parsley farmer is sued, can they garnish his wages?*
14. *Would a fly without wings be called a walk?*

AmigaMCCC News

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January Calendar

- Jan 14 — Amiga By-The-Loop Chapter
7:30 pm — N.Richland Hills Community Ctr.
Loop 820 at Rufe Snow, N.Richland Hills*
- Jan 14 — MCCC Board of Director's Meeting
Approx. 10:00 pm — TGI Friday's
Loop 820 & Bedford Euless Road*
- Jan 17 — Amiga North Dallas Chapter
7:30 pm — SMU Building
Collins Blvd. & International Pkwy, Richardson*
- Jan 26 — Newsletter Deadline — 7:00 am*

Editor's Comments

There are a couple of big news items this month. One is the redesigned club web site. I think it has more of a professional appearance than it did before. You'll also find that a few things have been re-arranged. For instance, the monthly downloads have been given a button all their own to make them easier to get to. I hope you enjoy the changes.

The other big news comes from Amiga. We have the first Executive Update in many months. There's a link to the article on the club website. Check it out.

...Bill Raecke